

PubMed

Search

Display Settings: Abstract



Cancer Sci. 2011 Dec 22. doi: 10.1111/j.1349-7006.2011.02198.x. [Epub ahead of print]

Curcumin promotes differentiation of glioma-initiating cells by inducing autophagy.

Zhuang W, Long L, Zheng B, Ji W, Yang N, Zhang Q, Liang Z.

Department of Pharmacology, Medical School of Soochow University, Suzhou 215123, China.

Abstract

Glioblastoma (GBM) is a highly aggressive brain tumor characterized by increased proliferation and resistance to chemotherapy and radiotherapy. Recently, a growing body of evidence suggests that glioma-initiating cells (GICs) are responsible for the initiation and recurrence of GBM. However, the factors determining the differential development of GICs remain poorly defined. In the present study, we show that curcumin, a natural compound with low toxicity in normal cells, significantly induced differentiation of GICs in vivo and in vitro by inducing autophagy. Moreover, curcumin also suppressed tumor formation upon intracranial GICs implantation into mice. Our results suggest that autophagy plays an essential role in the regulation of GICs self-renewal, differentiation and tumorigenic potential, suggesting autophagy could be a promising therapeutic target in a subset of glioblastomas. This is the first evidence that curcumin has differentiating and tumor-suppressing actions on GICs. © 2011 Japanese Cancer Association.

© 2011 Japanese Cancer Association.

PMID: 22192169 [PubMed - as supplied by publisher]

LinkOut - more resources